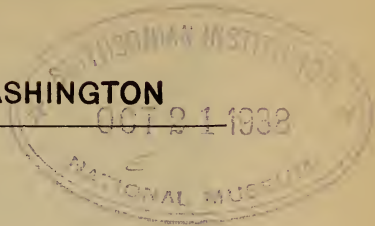


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



REPTILES AND AMPHIBIANS FROM THE LESSER
ANTILLES COLLECTED BY DR. S. T. DANFORTH.

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A small collection of frogs, lizards and snakes from the Lesser Antilles was made in 1937 by Dr. Stuart T. Danforth of the University of Puerto Rico, while engaged primarily in collecting the birds of that region. His material is noteworthy in containing a new species of lizard and a subspecies of snake not hitherto recognized. Perhaps the most important item in the lot is a series of 22 skinks from a single island which shows that some of the supposedly variable characters do not vary greatly in an adequate series from a single region.

The remaining records are more or less supplementary to my notes on the Bartsch collections¹ made in some of the same localities. Part of the Danforth collection is now deposited in the United States National Museum, the rest is in the Museum of the University of Puerto Rico in Mayagüez.

Eleutherodactylus urichii (Boettger).

Seven frogs of this species, U.S.N.M. 103972-5 and U.P.R. 884-6 were taken in the crater of Soufrière Mt., St. Vincent, on March 15, 1937, and two others (U.P.R. 887-8) are labeled simply "St. Vincent, March 1937." Although the following species *Eleutherodactylus martinicensis* likewise occurs on this island, it is not difficult to distinguish them, as the former has a larger head and longer femur than the latter.

Eleutherodactylus martinicensis (Tschudi).

One from Kingston, St. Vincent (U.S.N.M. 103965) collected on May 15, 1937; three from Montserrat (U.P.R. 880-2) collected in February, 1937;

¹ Herpetological Collections from the West Indies made by Dr. Paul Bartsch under the Walter Rathbone Bacon Scholarship 1928-1930 (Smithson, Misc. Coll., vol. 92, No. 7, 1934, pp. 1-48).

53 from Saba (U.S.N.M. 103922-64 and U.P.R. 870-9) taken in January, 1937.

Three individuals (U.S.N.M. 103676-7 and U.P.R. 83) from Matouba, Guadeloupe, and four from Dolé, Guadeloupe (U.S.N.M. 103968-71) are referred with some doubt to this species. They have a somewhat larger head than do the *martinicensis* from Saba, while the large size of the adults—32 mm.—the spotted venter and the tubercular dorsal surface are not in agreement with *urichii*.

Eleutherodactylus johnstonei Barbour.

Two individuals (U.P.R. 889-90) were taken in Grand Etang, Grenada, on May 3, 1937.

Leptodactylus validus Garman.

Three fine males and two females from the north end of Bequia Island Grenadines (U.P.R. 93-4 and U.S.N.M. 103976-8) collected on March 24, 1937, seem to be identical in every respect with those of this species from St. Vincent.

Hemidactylus mabouia (Moreau de Jonnés).

Five specimens of various ages (U.S.N.M. 103979-80 and U.P.R. 104 and 891) were taken at Mayreau, Grenadines, in April, 1937. One young individual (U.S.N.M. 104204) came from Saba Island, January, 1937.

Thecadactylus rapicaudus (Houttuyn).

U.S.N.M. 103981-3 and U.P.R. 892-4, six specimens altogether, were collected on Saba Island in January, 1937.

Sphaerodactylus fantasticus Duméril and Bibron.

Two individuals (U.S.N.M. 103984 and U.P.R. 895) from Dolé, Guadeloupe, were collected on June 19, 1937.

Sphaerodactylus sabanus, new species.

Diagnosis.—Resembles *Sphaerodactylus vincenti* in general appearance. Differs in having smooth scales on chest and in lacking any pale V-shaped marking above base of tail.

Type.—U.S.N.M. 103985, male, Saba Island collected in January, 1937, by Dr. Stuart T. Danforth. Snout rather long and acuminate, its length $2\frac{1}{2}$ times the diameter of the eye-opening; eye considerably nearer to ear than to tip of snout; rostral moderate, with a short median cleft behind and a pair of weak crescentic grooves posteriorly; nostril between rostral, first supralabial, one postnasal and two supranasals, the anterior of which is separated from its fellow by two relatively large hexagonal scales; superciliary spine moderate in size; three large supralabials to a point below the center of the eye, followed by two or three very small supralabials; a very large anterior infralabial and a much smaller second to the same point, followed by two others decreasing in size posteriorly; top of head covered with elongate keeled granules, enlarging considerably on the snout

and becoming smooth anteriorly, those between the supranasals being about 3 times the area of the interocular granules; granules of occiput and nuchal region very small, heavily keeled; scales of back heavily keeled, imbricate, those of the middorsal area smaller but not granular, about 12 scales on the side of the back equal to distance from tip of snout to center of eye; laterals about equal in size to dorsals, slightly irregular, faintly keeled, about 12 in the standard distance; mental considerably longer than rostral, followed by two postmentals which are scarcely larger than the anterior gulars which follow them; scales of central gular region very small, smooth, becoming larger and very faintly keeled at base of throat; scales of chest and belly smooth, rounded, imbricate, about 10 ventrals to the standard distance, quite regular in size; scales of limbs anteriorly and below like those of belly, much smaller and granular posteriorly, keeled above; 11 smooth lamellae under the 4th toe; scales of tail (partly reproduced) above keeled, imbricating, below smooth, transversely enlarged. A round "escutcheon" of differentiated scales about 5 scales wide on the posterior belly, with a narrow prolongation 1 scale wide extending down each femur over halfway to the knee in the male.

Dimensions.—Head and body, 28 mm.; tail (reproduced), 22 mm.; width of head, 5 mm.; tip of snout to ear, 7 mm.; foreleg, 7 mm.; hind leg, 9 mm.

Color in alcohol.—Dorsum immaculate olive, lightening to drab on the tail, which is coarsely spotted with sepia; venter pale ecru drab, the throat faintly clouded with drab; a few dark dots on the belly; lower surface of tail dark spotted.

Paratypes.—Twenty-nine specimens, U.S.N.M. 103986–104004 and U.P.R. 896–905 with the same data as the type.

Variation.—The largest female measures 30 mm. from snout to vent; none of the males exceed 28 mm. in length, however. The dorsal scales are 11 to 13 in the standard distance, while the ventrals are 8 to 10. There are 11 or 12 lamellae under the 4th toe. Some specimens are very dark and appear of one shade all over the upper surfaces; some which are a little lighter show a dark dotting over the back and some wavy light lines irregularly encircling a dark occipital spot. There is no trace of any specialized marking above the base of the tail. The young measuring 16 mm. are identical in color with the adults and there seems to be no sexual dimorphism. In some specimens the venter is more coarsely dotted with brown than in others, and the throat has a dark reticulated pattern.

Relationships.—The new form is apparently most closely related to *Sphaerodactylus vincenti* from the distant island of St. Vincent, rather than to its much closer neighbors, *sputator* from St. Eustatius and *elegantulus* from Antigua.

Its differences from *vincenti* have already been pointed out in the diagnosis, while its pattern alone serves to distinguish it at once from *sputator* and *elegantulus*.

Iguana iguana iguana (Linnaeus).

The dried skin of a half-grown male (U.P.R. 906) was preserved at Spring Bay, Saba Island, on January 25, 1937. Under date of April 4,

1938, Dr. Danforth writes: "I have two additional skins . . . No iguanas were collected in the Grenadines due to lack of time for their preparation, although they abounded on most of the smaller islets. On Petit Nevis they swarmed as I had never dreamed of seeing them. There they perched in low trees and as one walked through the bush they fell to the ground with a great flop and scrambled hurriedly off through the leaves making a great commotion. At any given moment two or three were in sight or hearing scuttling rapidly away."

Anolis asper Garman.

A fine adult male, U.S.N.M. 104005 with a wide tail fan was taken at St. Louis, Marie Galante, on July 1, 1937, and a smaller specimen, U.P.R. 128, presumably a female, came from Trois Islets, Marie Galante, July 18, 1937.

Anolis cristatellus cristatellus (Duméril and Bibron).

An adult male, U.P.R. 907, from St. Thomas, Virgin Islands, collected on January 18, 1937.

Anolis krugi gingivinus (Cope).

Lizards of all ages, U.S.N.M. 104006-30 and U.P.R. 908-917 from St. Bartholomew, collected on December 28, 1930; one individual, U.P.R. 130 from St. Eustatius, taken on the same date.

Anolis krugi wattsi (Boulenger).

A very young one from Nevis, U.P.R. 918, taken on February 5, 1937, agrees entirely with the smallest in a series from St. Kitts.

Anolis leachii lividus (Garman).

A large series, U.S.N.M. 104031-63 and U.P.R. 919-928 was taken at Montserrat in February, 1937.

Anolis richardii Duméril and Bibron.

Two specimens, U.P.R. 99 and U.S.N.M. 104064 from the north end of Bequia Island, Grenadines, taken on March 25, 1937; one, U.P.R. 129 from Lake Antoine, Grenada, collected on May 7, 1937; a large male, U.S.N.M. 104065 from Carriacou, Grenadines, July, 1935. A male, U.S.N.M. 104197 from Montrose, St. Vincent, taken on March 19, 1937, is apparently the first one to be recorded from this island. A very young lizard, U.S.N.M. 104195 from the Crater of Soufrière Mt., St. Vincent, collected on March 15, 1937, is referred to this species, as it is obviously not like the long-snouted young of *Anolis roquet vincentii*.

Anolis roquet gentilis (Garman).

An adult male, U.P.R. 92, from the south end of Bequia Island, Grenadines, collected on March 23, 1937; 19 specimens, U.S.N.M. 104076-87 and U.P.R. 932-938 from Bequia collected during April, 1937; 13 lizards, U.S.N.M. 104066-75 and U.P.R. 929-931 from Mayreau, Grenadines (spelled Mayero in Debes' Handatlas, 1905) collected in April, 1937.

Anolis roquet vincentii (Garman).

A large series of over 100 lizards, U.P.R. 949-968 and U.S.N.M. 104108-90 was taken at Kingstown at various dates between March 18 and May 16, 1937; one, U.S.N.M. 104196 came from Montrose, St. Vincent, on March 19, 1937; one, U.S.N.M. 104191 from the Grand Bonhomme Mts., in March, 1937; and three very young ones, U.S.N.M. 104192-4 are labeled simply "St. Vincent, March, 1937." It seems to be very common in Kingstown.

Anolis sabanus Garman.

Thirty specimens, U.P.R. 938-948 and U.S.N.M. 104088-107 were taken on Saba Island in January, 1937. It appears to be quite abundant.

Ameiva aquilina Garman.

I can now add some additional counts to the record for this species in my earlier paper ("Herpetological Collections from the West Indies made by Dr. Paul Bartsch under the Walter Rathbone Bacon Scholarship 1928-1930," *Smithson. Misc. Col. Vol. 92, No. 7, 1934, p. 41*).

Mus. No.	Locality	Head & Body mm.	Ventrals		Femoral pores	Tail at 15th verticil scales	Lamellae under 4th toe
			Trans- verse rows	Longi- tudinal rows			
UPR 89	Bequia Id.	106	32	10+2	19-19	42	37
UPR 90	"	93	33	10+2	18-18	39	38
USNM 104199	"	104	33	12	19-19	43	36
USNM 104198	"	114	32	10+2	19-19	41	39
UPR 102	"	53	33	12	18-16	41	36
USNM 104202	Union Id.	45	32	10+2	19-21	42	36
USNM 104200	Mayreau Id.	75	32	12	19-18	41	35
USNM 104201	"	62	33	10+2	18-20	40	34

Those from Bequia were collected between March 23 and 25, 1937; the one from Union Island in April, and the two from Mayreau on April 16 and 17.

Ameiva exsul Cope.

Two young ones, U.P.R. 969 and U.S.N.M. 104203 from Signal Hill, St. Thomas, collected on January 16, 1937.

Ameiva pluvianotata Garman.

One specimen, U.P.R. 970 from Montserrat, collected in February, 1937.

Mabuya mabouya mabouya (Lacépède).

Probably the largest series of this form yet taken in the Lesser Antilles was secured by Dr. Danforth on Mayreau Island, Grenadines, in April, 1937. A single individual also came from Carriacou, Grenadines, in July, 1935. Regarding these, Dr. Danforth wrote me on April 4, 1938, that "a rather large series was obtained on Mayreau, due to exceptional luck as they are ordinarily rarely seen. We happened to be there during the

first shower after a prolonged dry spell. These lizards emerged from their hiding places in large numbers during the shower to drink water at tiny pools formed by the rain, and could be taken in numbers. No more were taken as at the time we had run practically out of containers and preservative. One from Carriacou, U.S.N.M. 104205, is also included; I do not recall the details regarding its capture (two years previously). Local name, 'Shine Lizard.' "

The variations in the 22 specimens from Mayreau, Grenadines, U.S.N.M. 104206-27 listed in the same order as in Dunn's "Notes on American Mabuyas" (Proc. Acad. Nat. Sci. Philadelphia, vol. 87, 1935, pp. 540-543) are given below:

Supranasals: Distinctly or barely in contact in 11 cases; not in contact in 10 cases; not determinable because of injury in 1 case.

Prefrontals: Not in contact in every instance.

Parietals: Distinctly or barely in contact in 19 cases; not in contact in 3 cases.

Nuchals: 1 pair in every instance, except that two individuals have a subdivided nuchal on one side.

Supraoculars: 4 in every case, the second always being the largest.

Subocular: The sixth supralabial is beneath the eye in 8 cases; the fifth in 34 cases, and the fourth in 1 case. Here the right and left sides are given separately.

Scales around the body: 30 in 20 cases; body mutilated in 2 cases.

Scales from chin to vent: Range in 17 cases, 57 to 61; average, 59.1. The remainder of the specimens are mutilated so that this count can not be made.

Anal: Contrary to Dr. Dunn's statement that "all *mabouya* have the median anals more or less larger than the lateral," the median pair is distinctly smaller than the scales directly bordering them laterally in most of the specimens of this series. One lizard has the median anals about $\frac{2}{5}$ the area of the bordering scales; 5 have them $\frac{1}{2}$ that area; 6 have them $\frac{2}{3}$ the area, while only 3 have them equal. In five individuals the median pair is dissimilar in size, so that the proportions of the four median scales are 1 : 1 : 1 : 2 or 2 : 1 : 1 : $1\frac{1}{2}$. In two, mutilations prevent the count.

Proportions: The limbs adpressed along the sides are widely separated in all cases. The tail is nearly perfect on three of the individuals, of which a body length of 82, 75 and 71 mm. corresponds with a tail length of 129, 118 and 108 mm. respectively. This shows that the normal tail length slightly exceeds $1\frac{1}{2}$ times that of the head and body. The largest specimen in the series measures 92 mm. from snout to vent; its tail is broken off.

Coloration: All the specimens are quite uniform as to the dark stripe, about $1\frac{1}{2}$ scales in width, along the side of head and body, bordered above and below by distinct narrow light stripes. Occasionally some dark spots along the sides of the back may suggest the remnants of still another stripe.

Although Dr. Dunn does not list the number of lamellae under the fourth toe, I find that in this series there are 16 in 3 cases, 15 in 11 cases, 14 in 6 cases and 13 in 1 case. This is all the more interesting since the single Carriacou specimen has 19 lamellae. This individual also differs in having

the sixth and seventh labials beneath the eye on the right side of the head, and the sixth, seventh and eighth on the left. In this specimen the supranasals, the prefrontals and the parietals are not in contact; 1 pair of nuchals; 4 supraoculars; 30 scales around the body; median anals $2/3$ the size of the bordering scales.

Boa hortulana cookii (Gray).

A single specimen (U.P.R. 106) from Union Island, Grenadines, taken on April 22, 1937, has 42 scales at midbody; ventrals ?; anal single; 105 caudals; 10 pitted supralabials followed by 2 or 3 very small smooth ones.

Another from Bequia, Grenadines, collected on April 1, 1937, now U.S.N.M. 104228 has 39 scalerows, 253 ventrals, a divided anal, caudals?, supralabials 11 pitted plus 2 or 3 smooth.

Dr. Danforth writes that "this conspicuously marked snake is greatly feared by the natives, who all insist it is poisonous. With its striking markings and enlarged head it is very different from anything else I have seen in the West Indies . . . Native name, Congo snake."

Drymobius boddaertii bruesi (Barbour).

U.P.R. 101 a female from Bequia Island, Grenadines, captured on March 25, 1937; scales 17, ventrals 198, anal divided, tail defective, supralabials 9, oculars 1+2, temporals 1+2, with a very small scale intercalated above the anterior temporal on each side.

U.S.N.M. 104231 a female from Bequia collected on April 1, 1937; scales 17, ventrals 201, anal divided, tail defective, supralabials 10 on right side, 9 on left, oculars 1+2, temporals 1+2, with an intercalated scale above the anterior temporal on each side.

U.S.N.M. 104230 a male from Bequia collected in April, 1937; scales 17, ventrals 197, anal divided, caudals 124, supralabials 9, oculars 1+2, temporals 1+2 with a very small scale intercalated above the anterior temporal on the right side only.

U.P.R. 100 an immature specimen from Spring Bay, Bequia, collected on March 25, 1937; scales 17, ventrals 198, anal divided, tail defective, supralabials 9, oculars 1+2, temporals 1+2 without intercalated scales.

U.S.N.M. 104229 a female from Carriacou, Grenadines, collected in July, 1935; scales 17, ventrals 207, anal divided, caudals 120, supralabials 9, oculars 1+2, temporals 1+2 without intercalations.

U.P.R. 971 a mutilated specimen, probably an immature male, from Kingstown, St. Vincent, collected on May 16, 1937; scales 17, ventrals 196, anal divided, tail defective. The supralabials and oculars are injured, but there appears to be a single anterior temporal without intercalations followed by two posterior temporals on each side of the head.

Alsophis leucomelas danforthi, new subspecies.

Diagnosis: Resembles *Alsophis leucomelas sanctorum* Barbour, differs mainly in coloration, being darker and more spotted.

Type.—An adult male, U.S.N.M. 104237 (formerly U.P.R. 126) from

Terre-de-Bas, Iles des Saintes, collected on July 5, 1937, by Dr. Stuart T. Danforth. Paratype, a male U.P.R. 127 with the same data as the type.

Description of the type.—Rostral much broader than deep, scarcely visible from above; internasals about equal to prefrontals in length; frontal longer than its distance from end of snout, a little shorter than the parietals, separated from the preocular; supraocular about two-thirds as wide as frontal; nasal divided, slightly longer than its distance from eye; loreal rather small, rectangular, broader than deep; one preocular; two postoculars, nearly the same in size; temporals 1+2; 8 upper labials, the second in contact with the posterior nasal and loreal and barely touching the preocular, the third, fourth and fifth entering the eye; 9 lower labials, the first meeting its fellow behind the symphysial, the first four in contact with the anterior chinshields, the fourth and fifth with the posterior ones, which are considerably longer than the anterior; scales in 19 rows at midbody and on the neck, 15 just before beginning of tail; ventrals 207; anal divided; caudals 141.

Color (in alcohol).—Ground color ecru drab; top of head slate color; a series of very irregular black blotches about 5 scales wide on top of neck, the outer margins of which gradually form an irregular black dorsolateral line on the 7th and 8th scale rows, the median area having irregular transverse blotches, decreasing on the anterior third of the body, then increasing in area so that the posterior part of the body as well as the tail are black, with only an occasional small light spot; a dark brown stripe on side of head leading to a series of indistinct, vertical dark blotches on the side of the body, ending on the outer corners of the ventrals as a group of dark dots; upper labials with minute sepia dots; venter pale ecru drab, the throat finely dotted with brown; a more or less double series of irregular small black spots on the middle of each ventral beginning approximately at the 40th and increasing in area until the entire center of each ventral is quite black, with a pale area near the ends of the ventrals, the lower side of the tail being nearly entirely black.

Dimensions.—Head and body, 606 mm.; tail, 334 mm.

Variation.—The only other specimen secured, also a male, has 205 ventrals, the tail defective, otherwise the same formula as the type. In this individual the dark dorsolateral lines are much more broken, so that the dorsal pattern appears like a dark and very irregular chain along the back. On the other hand, a light dorsolateral stripe bordering this chain pattern below becomes quite prominent before the beginning of the middle third of the body, and remains light and conspicuous even on the tail.

Alsophis leucomelas manselli Parker.

Two males and a female of this species were collected at Montserrat in February, 1937. The larger male, now U.S.N.M. 104235, measures 725 mm. from snout to vent, the tail being defective. It has 19 scale rows, 200 ventrals, a divided anal, 8 supralabials, 1+2 oculars, 1+2 temporals. The smaller male, U.S.N.M. 104236, has 19 scale rows, 204 ventrals, a divided anal, 136 caudals, 8 supralabials, 1+2 oculars, 1+2 temporals on the right, and on the left an intercalated scale above the anterior temporal.

The female, U.P.R. 975, has 203 ventrals and 116 caudals, otherwise like the larger male in scalation. The coloration of all specimens seems to agree well with that of the type series.

Alsophis rufiventris (Duméril and Bibron).

Six examples were taken on Saba Island in January, 1937. A female, U.S.N.M. 104232, has scales 23, ventrals 214, anal divided, caudals 119, supralabials 8, oculars 1+2, temporals 1+2.

U.S.N.M. 104233, scales 23, ventrals 214, anal divided, caudals 102, supralabials 7 on the right, 8 on the left, oculars 1+2, temporals 1+2 on the right, and a small scale preceding the large anterior temporal on the left.

A male, U.P.R. 972, scales 23, ventrals 216, anal divided, caudals 119, supralabials 8, oculars 1+2, temporals 1+2.

A male, U.P.R. 973, scales 23, ventrals 216, anal divided, caudals 115, supralabials 8, oculars 1+2, temporals 1+2 on the right, 1+1 on the left side.

A half-grown male, U.P.R. 974, scales 23, ventrals 114, anal divided, caudals 123, supralabials 8, oculars 1+2, temporals 1+2.

The sixth specimen, U. S. N. M. 104234, is a very young one. The coloration seems to be normal on all the individuals.

Testudo tabulata Walbaum.

Dr. Danforth informs me that "land tortoises were found on most of the Grenadines, apparently the common South American species which also occurs on Barbuda, etc. No specimens were saved, though I had some alive for a while. I recall finding them on Bequia, Petit Nevis, Isle à Quatre, Mustique, Canouan, and probably other islands. On Canouan on April 10, 1937, I found an egg of this species lying loose among the leaves and other debris under the xerophytic forest on Mt. Royal, the highest point on the island and one of the highest in the Grenadines. A number of the adult tortoises were found in the same vicinity. I kept the egg for some weeks in the vain hope that it might hatch."